

**AMENDMENTS TO THE CLAIMS**

1–8. (Cancelled).

9. (Currently Amended) A method for reconfiguring a telecommunications transport network after addition or removal of a network resource, the method comprising:

identifying a sequence of single circuit movements to ~~re-route~~ a modify the network from a set of  $n$  actual circuits  $CA_i$  ( $i=1, \dots, n$ ), each satisfying a corresponding demand  $R_i$  to a set of feasible intermediate circuits  $CI_i$  which continue to satisfy the demands  $R_i$  and which best approximate a series of target circuits  $CT_i$ , comprising:

- (a) initializing, at a network simulator, the circuit set  $CI$  to  $CA$ ;
- (b) for each demand  $R_i$  still to be processed
  - (i) calculating, at the network simulator, one or more candidate replacement circuits  $CI_i$ , each candidate replacement circuit  $CI_i$  satisfying the demand  $R_i$  and having a lower cost difference with respect to the corresponding target circuit  $CT_i$  than the current circuit  $CI_i$  satisfying the demand  $R_i$ ;
  - (ii) replacing, at the network simulator, the current circuit  $CI_i$  with the candidate replacement circuit  $CI_i$  having the least cost difference; and
  - (iii) marking, at the network simulator, the demand  $R_i$  as having been processed; and
- (c) identifying, at the network simulator, the sequence of single circuit movements with which circuits  $CI_i$  were replaced as the series of single circuit movements to ~~re-route~~ modify the network.

10. (Previously Presented) The method of claim 9 wherein each circuit comprises one or more legs connecting two or more nodes, and wherein calculating the cost difference of a candidate replacement circuit  $CI_i$  with respect to the corresponding target circuit  $CT_i$  comprises summing the costs of the legs of the circuit  $CI_i$  that do not overlap with the legs of the target circuit  $CT_i$ .

11. (Previously Presented) The method of claim 10 wherein calculating the cost difference further comprises excluding a cost associated with an unused leg of the target circuit  $CT_i$ .

12. (Previously Presented) The method of claim 9 wherein the cost of a circuit is the sum of the cost of each circuit leg.

13. (Currently Amended) The method of claim 9 further comprising, after processing all demands  $R_i$ , determining whether to take the sequence with which circuits  $CI_i$  have been replaced as the series of single circuit movements to ~~re-route~~ modify the network, or whether to repeat step (b) using the current set of feasible intermediate circuits  $CI_i$ .

14. (Previously Presented) The method of claim 13 wherein the determination is made based on the overall difference in cost between the CA circuits and the CI circuits.

15. (Previously Presented) The method of claim 13 wherein the determination is made based on the overall difference in cost between the CI circuits and the CT circuits.

16. (Previously Presented) The method of claim 9 further comprising providing the identified sequence of single circuit movements to a network manager for implementation on the network.

17. (Previously Presented) The method of claim 16 further comprising performing the identified sequence of single circuit movements on a network by the network manager.

18. (Currently Amended) A telecommunications transport network comprising:

a plurality of circuits that satisfy a corresponding plurality of demands  $R_i$ ; and

a network simulator operative to reconfigure the telecommunications transport network after addition or removal of a network resource by identifying a sequence of single circuit movements to ~~re-route~~ modify the network by:

(a) initializing a circuit set  $CI$  to  $CA$ , wherein  $CA$  comprises a set of  $n$  actual circuits  $CA_i$  ( $i=1, \dots, n$ ), each satisfying a corresponding demand  $R_i$ , and wherein  $CI$  comprises a set of feasible intermediate circuits  $CI_i$  which continue to satisfy the demands  $R_i$  and which best approximate a series of target circuits  $CT_{i,j}$ ;

(b) for each demand  $R_i$  still to be processed

(i) calculating one or more candidate replacement circuits  $CI_i$ , each candidate replacement circuit  $CI_i$  satisfying the demand  $R_i$  and having a lower cost difference with respect to the corresponding target circuit  $CT_i$  than the current circuit  $CI_i$  satisfying the demand  $R_i$ ;

(ii) replacing the current circuit  $CI_i$  with the candidate replacement circuit  $CI_i$  having the least cost difference; and

(iii) marking the demand  $R_i$  as having been processed; and

(c) identifying the sequence of single circuit movements with which circuits  $CI_i$  were replaced as the series of single circuit movements to ~~re-route~~ modify the network.